SUMMARY OF DATA COLLECTION FOR STREAM QUALITY AND AQUATIC BIOLOGY--RED RIVER NAWQA STUDY UNIT, 1992-95

Study component	Objectives	Brief description and water-quality measures	Number of sites	Frequency during 1993-95	Historical data available ?
Stream quality					
Bottom-sediment survey	Determine presence of potentially toxic compounds attached to sediments in major streams.	Sample depositional zones of the Red River and selected tributaries for trace elements and hydrophobic organic compounds.	22	1 (in 1992)	limited
Bottom sediment distribution survey	Determine distribution of toxic compounds attached to sediment in basin streams.	Sample sites in addition to bottom sediment survey sites mostly for trace elements.	8	1	limited
Water chemistry stations	Describe concentrations and loads of chemicals, suspended sediment, and nutrients at selected sites basinwide.	Sample at or near sites where streamflow is measured continuously for major ions, organic carbon, suspended sediment, and nutrients.	15	~14 per year, 3 years	at some sites
Intensive agriculture stations	Determine concentration and timing of agricultural-related compounds that run off to streams.	Subset of basinwide chemistry stations where 80 pesticides are sampled at least monthly and during selected runoff events.	5	~20 per year, 2.5 years	at 2 sites
Synoptic studies	Describe short-term presence and distribution of contamination over broad areas and how well the chemistry stations represent the entire Red River Basin.	Sample streams during high flow for pesticides and (or) nutrients, suspended sediment, organic carbon, and streamflow; one synoptic sampling for volatile organic compounds.	27	1	limited
Aquatic biology					
Fish tissues - contaminants	Determine presence of contaminants that can accumulate in fish tissues.	Collect fish species that can be found in most streams of the Red River Basin; sample composites of whole fishes for organic compounds and fish livers for trace elements.	11	1 (in1992)	at 1 site
Comprehensive ecology	Assess in detail biological communities and habitat in streams representing primary ecological regions.	Sample and quantify fish, macroinvertebrates, and algae in four of the major ecological regions located at or near a stream-chemistry station; quantitatively describe stream habitat for these organisms; replicate sampling for three consecutive years over three stream reaches.	6	1 per year, 3 years	limited
Basinwide ecology	Determine presence and community structure of aquatic species and habitat in representative streams across the Basin.	Sample and identify fish, macroinvertebrates and algae at or near stream-chemistry stations and describe habitat.	16	1	limited
Fish-tissues comparison	Determine differences in concentrations of mercury in different fish tissues in the Red River.	Sample two sizes of carp at four sites and catfish at one site in the Red River for mercury concentration in livers, fillets, and whole bodies.	4	1	limited